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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte HISAO SASAI, TAKAHIRO NISHI, YOUJI SHIBAHARA, TOSHIYASU SUGIO, and VIRGINIE DRUGEON

Appeal 2017-001020
Application 14/054,974
Technology Center 2400

Before JOSEPH L. DIXON, JAMES R. HUGHES, and ERIC S. FRAHM, *Administrative Patent Judges*.

DIXON, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from a Final Rejection of claims 2, 3, 6, and 7. Claims 1, 4, and 5 have been canceled. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

The claims are directed to an image decoding method, image coding method, image decoding apparatus, image coding apparatus, program, and integrated circuit. Abstract. Claim 6, reproduced below, is illustrative of the claimed subject matter:

> 6. An encoding method for encoding an image on a block-by-block basis, the encoding method comprising:
>
> selecting one prediction mode out of three or more prediction modes;
>
> encoding a current block to be encoded included in the image by predicting the current block using the selected prediction mode; and
>
> encoding mode information that specifies the selected prediction mode,
>
> wherein the encoding of the mode information further includes:
>
> determining one of the three or more prediction modes as a first prediction mode, based on a prediction mode used to predict a neighboring block that is already encoded and adjacent to the current block;
>
> determining another one of the three or more prediction modes as a second prediction mode that is different from the first prediction mode, the second prediction mode being determined independently from

each of prediction modes for neighboring blocks that are adjacent to the current block; and

setting the mode information based on the selected prediction mode and at least one of the first prediction mode and the second prediction mode, and

the determining of the second prediction mode includes:

determining whether or not the first prediction mode is a fixed predefined mode included in the three or more prediction modes, the fixed predefined mode being fixed independently from each of the prediction modes of the neighboring blocks; and

determining the fixed predefined mode as the second prediction mode, when the first prediction mode is not the fixed predefined mode.

REFERENCES

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Kotaka et al.	US 2010/0260261 A1	Oct. 14, 2010
Coban et al.	US 2011/0317757 A1	Dec. 29, 2011

Amonou et al. ("Video coding technology proposal by France Telecom, NTT, NTT DoCoMo, Panasonic and Technicolor", Joint Collaborative Team on Video Coding (JCT-VC) of ITU-T SG16 WP3 and ISO/IEC JTC 1/SC29/WG11, JCTVC-A114- Annex A, 151 Meeting: Dresden, DE, April 15-23, 2010).

REJECTIONS

The Examiner made the following rejections:

Claims 2, 6, and 7 stand rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Coban in view of Amonou et al.

Claim 3 stands rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Coban in view of Amonou et al., and further in view of Kotaka.

ANALYSIS

With respect to claims 2, 6, and 7, Appellants do not set forth separate arguments for patentability, and we address Appellants' arguments in the order set forth in the Appeal Brief. We further note that Appellants' did not file a Reply Brief to respond to the Examiner's Answer.

Appellants contend:

> Amonou contains no disclosure that a fixed predefined mode is determined as the "rem_intra_pred_mode" (the second prediction mode) when the "most_probable_mode" (the first prediction mode) is not the fixed predefined mode.
>
> Additionally, even if assuming for the sake of argument that (i) the "most_probable_mode" taught by Amonou corresponds to the fixed predefined mode required by the above-noted feature of claim 6 and (ii) the "prediction mode to be derived" taught by Amonou corresponds to the second prediction mode required by the above-noted feature of claim 6, Appellant notes that Amonou contains no disclosure that the "most_probable mode" is determined as the "prediction mode to be derived" when a first prediction mode determined based on a prediction mode used to predict a neighboring block is not the "most_probable mode."

(Br. 5, 6).

The Examiner maintains:

> As cited by the Examiner in the last office action, the primary reference Coban fairly discloses that identifying a second prediction mode for a second neighboring block of the video block, wherein the second prediction mode is one of the set of prediction modes; based on the first prediction mode and the second prediction mode, identifying a most probable prediction mode for the video block, wherein the most probable prediction mode is one of a set of main modes and the set of main modes is a sub-set of the set of prediction modes (see paragraphs 0009-0012). Furthermore, the secondary reference Amonou fairly discloses that the first estimated mode is the most_probable_mode and the second estimated mode is the rem_intra_pred_mode and mode information is the prev_intra_pred_mode_flag, wherein the second estimated mode (the rem_intra_pred_mode) is independent from other prediction modes for neighboring blocks (see section 7.5.2). Amounou further discloses that the value of most_probable_mode is fixed for the whole sequence and equal to the syntax element mpm default: If the syntax element prev_intra_pred_mode_flag is equal to 1, the prediction mode is equal to most_probable_mode (e.g. a first prediction mode as claimed) and if the syntax element pre_intra_pred_mode_flag is equal to 0, the syntax element rem_intra_pred_mode should be present in the bitstream; If the value of the syntax element rem_intra_pred_mode is strictly smaller than most_probable_mode, the prediction mode is equal to rem_intra pred mode (a second prediction mode as claimed); Otherwise, if the syntax element prev_intra_pred_mode flag is equal to 0 and the syntax element rem_intra_pred mode is superior or equal to most_probable_mode, the prediction mode is equal to rem_intra_pred mode+ 1 (e.g. second prediction mode as claimed). Appellant is reminded that the claims must be interpret[ed] as broadly as their terms reasonably allow in view of the specification. *In re Zletz,* 893 F.2d 319, 321 (Fed. Cir.1989).

(Ans. 4–5). Yet, the Examiner does not specifically identify the broadest reasonable interpretation of the claim limitations in the rejection or the Response to Arguments section of the Examiner's Answer.

The Examiner further maintains:

> For the sake of completeness, the primary reference, Coban fairly discloses identifying the first prediction mode for a first neighboring block of video block and determining the most probable prediction mode and actual prediction mode (e.g. the first probable prediction mode) (see paragraph 0009-0012, Figs. 7-8). Furthermore, as explained above, the secondary reference Amonou fairly teaches the first prediction mode and the second prediction mode to predict the neighboring blocks (see section 7.5.2).

(Ans. 6).

We find the Examiner's response generally repeats the language of the claim and quotes the reference, and does not specifically explain how the conditional limitations recited in the language of independent claim 6 are taught or suggested by the individual references or the combination. Additionally, the Examiner's statement of the rejection in the Final Action provides a similar limited discussion of the application of the prior art teachings. (Final Act. 6–8). Consequently, we find the Examiner has not shown that the combination of the Coban and Amonou references to teach or suggest the invention specifically recited in the language of independent claim 6. Nor has the Examiner sufficiently explained the differences between the invention as claimed and the limited teachings identified and relied upon by the Examiner in the rejection of independent claim 6.

Claims 2, 3, and 7

Appellants rely upon the arguments advanced with respect to independent claim 6 and further contend that the Kotaka reference does not remedy the deficiency in the rejection of independent claim 6 from which claim 3 depends. (App. Br. 7). We agree with Appellants that the Examiner has not set forth a sufficient showing of obviousness of claims 2, 3, and 7.

CONCLUSION

The Examiner erred in rejecting claims 2, 3, 6, and 7 based upon obviousness.

DECISION

For the above reasons, we cannot sustain the Examiner's obviousness rejections of claims 2, 3, 6, and 7 under 35 U.S.C. § 103(a).

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

REVERSED